Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-11. (Cancelled)

12. (New) A method of forming a coating on a substrate using a low pressure plasma spray, using a coating material in the form of a powder beam for spraying onto a surface of a substrate comprising:

operating the plasma spray to produce a plasma stream which delivers the coating material to the substrate, wherein the coating material in the powder beam is at least partially melted, the operating including introducing a plasma gas into a plasma gun to establish plasma gas operating conditions;

generating a plasma intensity sufficiently high enough to vaporize approximately 5-30% of the powder coating material;

maintaining a powder conveying rate sufficiently low enough to form an anisotropically structured coating having anisotropic columnar microstructures aligned perpendicular to the substrate surface having transitional zones in which material-deficient zones bound the columnar particles at their sides;

maintaining a process pressure sufficiently low enough to form an anisotropically structured coating having anisotropic columnar microstructures aligned perpendicular to the substrate surface having transitional zones in which material-deficient zones bound the columnar particles at their sides; and

maintaining a gas flow rate sufficiently low enough to form an anisotropically structured coating having anisotropic columnar microstructures aligned perpendicular to the

substrate surface having transitional zones in which material-deficient zones bound the columnar particles at their sides.

13. (New) The method of claim 12 wherein the process pressure is lower than 10,000 Pa.

14. (New) The method of claim 12 wherein the anisotropically structured coating comprises a heat insulating coating having a coating thickness between 20 and 1000 μm, said heat insulating coating being built up from a plurality of layers.

15. (New) The method of claim 12 wherein the anisotropically structured coating comprises a heat insulating coating having a coating thickness greater than 100 μm, said heat insulating coating being built up from a plurality of layers.

16. (New) The method of claim 12 wherein the process pressure is in the range between 50 and 2000 Pa.

17. (New) The method of claim 12 wherein the process pressure is in the range between 100 and 800 Pa.

18. (New) The method of claim 12 wherein the specific enthalpy of the plasma is produced by emitting an effective power that is in the range from 40 to 80 kW.

19. (New) The method of claim 12 wherein the powder beam is injected into the plasma with a process gas comprising a mixture of inert gases having a total gas flow in the range from 30 to 150 SLPM.

20. (New) The method of claim 19 wherein the mixture of inert gases comprises a mixture of argon, Ar, and helium, He, with the volume ratio of Ar to He being in the range from 2 : 1 to 1 : 4.

21. (New) The method of claim 12 wherein the powder delivery rate is between 5 and 60 g/min.

22. (New) The method of claim 12 wherein the powder delivery rate is between 10 and 40 g/min.

23. (New) The method of claim 12 wherein the substrate is moved with rotational movements relative to a cloud of defocused powder beam during the coating.

24. (New) The method of claim 12 wherein the substrate is moved with pivotal movements relative to a cloud of defocused powder beam during the coating.

25. (New) The method of claim 12 wherein the coating material comprises oxide ceramic components.

26. (New) The method of claim 25 wherein the oxide ceramic components comprises a material selected from the group consisting of zirconium oxide fully stabilized with yttrium, cerium or other rare earths and zirconium oxide partly stabilized with yttrium, cerium or other rare earths,

and wherein the material used as the stabilizer is added as an alloy to the zirconium oxide in the form of an oxide of the said rare earths.

27. (New) The method of claim 12 wherein the coating material has a particle size distribution as determined by a laser scanning method in the range between 1 and 50 μm.

28. (New) The method of claim 12 wherein the coating material has a particle size distribution as determined by a laser scanning method in the range between 3 and 25 μm.

29. (New) The method of claim 12 wherein the coating material's powdery particles are manufactured by a spray drying or a combination of melting and subsequent breaking and/or grinding.

30. (New) The method of claim 12 further comprising using an additional heat source configured for forming the coating on the substrate within a predetermined temperature range.

31. (New) The method of claim 30 wherein the predetermined temperature range is between 300 and 900 °C.

32. (New) The method of claim 30 wherein the predetermined temperature range is between 450 and 750 °C.

33. (New) The method of claim 12 wherein said anisotropically structured coating comprises a heat insulating layer.

34. (New) The method of claim 12 wherein said coating on said substrate comprises a heat insulating coating system, said heat insulating coating system including a heat insulating coating, and a base coating between the substrate and the heat insulating coating, wherein said heat insulating coating system is applied in a single work cycle by low pressure plasma spray (LPPS) thin film processes.

35. (New) The method of claim 34 wherein said substrate is a substrate selected from the group consisting of a Ni base alloy, and a Co base alloy.

36. (New) The method of claim 34 wherein said substrate is part of a component selected from the group consisting of a component of a stationary gas turbine, a component of an airplane power plant turbine vane, a component of an airplane power plant guide vane, a component of an airplane power plant turbine blade, a component which can be exposed to a hot gas, and a heat shield.

37. (New) The method of claim 34 further comprising heat treating said substrate comprising said heat insulating coating system.

38. (New) The method of claim 34 wherein said base coating includes a hot gas corrosion protection coating, whose coating thickness has a value between 10 and 300 μm, and which comprises at least in part, a metal alumnide of an MeCrAlY alloy, with Me standing for one of the metals Fe, Co or Ni, or a ceramic oxide material which preferably has a structure selected from the group consisting of a dense, a columnar, a directional, and a unidirectional structure.

39. (New) The method of claim 34 wherein said base coating includes a hot gas corrosion protection coating, whose coating thickness has a value between 25 and 150 μm, and which comprises at least in part, a metal alumnide of an MeCrAlY alloy, with Me standing for one of the metals Fe, Co or Ni, or a ceramic oxide material which preferably has a structure selected from the group consisting of a dense, a columnar, a directional, and a unidirectional structure.

40. (New) The method of claim 34 wherein said coating on said substrate further comprises a cover coating on the heat insulating coating.

41. (New) The method of claim 40 wherein said top coating comprises a smoothing coating whose coating thickness has a value between 1 and 50 μm and which comprises at least in part the same material as or a similar material to the heat insulating coating.

42. (New) The method of claim 40 wherein said top coating comprises a smoothing coating whose coating thickness has a value between 10 and 30 μm and which comprises at least in part the same material as or a similar material to the heat insulating coating.